

# WICONA reinvents the city

## Batimat 2015



**WICONA®**  
TECHNIK FÜR IDEEN

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# » The city: the new space for self-expression

*The city of the future? Everyone's talking about it. WICONA's creating it. And highlighting the fact with a new press campaign: "WICONA reinvents the city...", aimed at increasing brand visibility and engagement.*

## New press campaign

It reinvented its DNA at the start of 2015, and now WICONA is going further. The brand has devoted its new press campaign to its favourite playground: the city. More specifically, the city of the future. A complex system which needs expertise and know-how with big added value. The market is already excited about the concept of the "smart city". The challenge is considerable: by 2050, 70% of the world population will be in urban areas. There will be new demands for comfort and well-being, new needs to be met. There is a strong message for those who place orders and those who make recommendations: WICONA is ahead of the game.

## Targeting sustainable growth

Most of all, WICONA is taking a position. Or rather, imposing itself as the benchmark player. This campaign, in association with the regional cycle of conferences on the city of the future, is aimed at clearly showing that the brand, on top of its product innovations and technical offer, is already committed to finding high-performance and lasting solutions. Its ambition? To become the top expert in intelligent Aluminium solutions, to offer the construction market new ways of building. But also, within an increasingly crowded market, to offer its partners new prospects for growth. A global vision driven by positive energy. To feed the creativity of those who build... but starting with you.

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**WICONA**  
reinvents  
the city...



... and encourages  
the positive energy  
of architecture!

In the future, 70% of the planet's population will live in cities. A major challenge for architecture. New rules to invent.

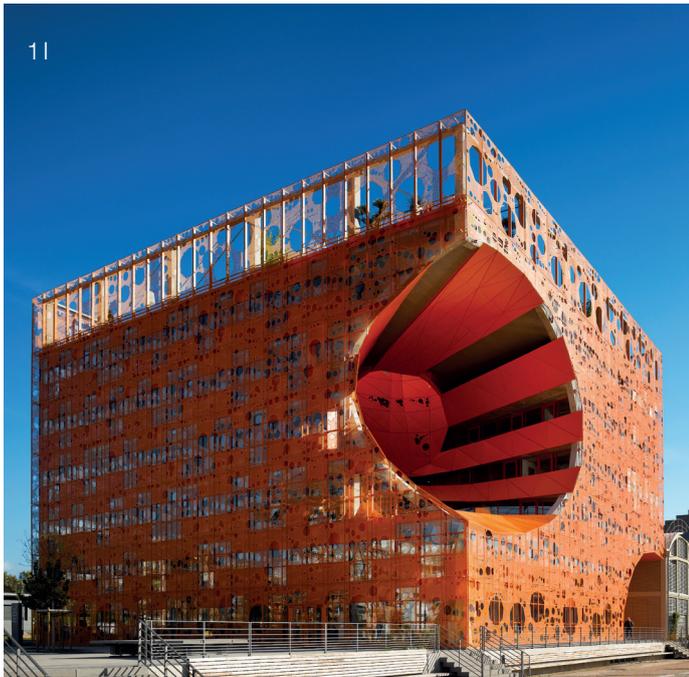
The citizen-user is a key player at the heart of this worldwide debate. Their needs, comfort and well-being guide the intelligent responses from the complex system which we call the city of the future.

WICONA's solutions are already a part of the sustainable urbanism approach, which contributes to the economic development of the construction industry.

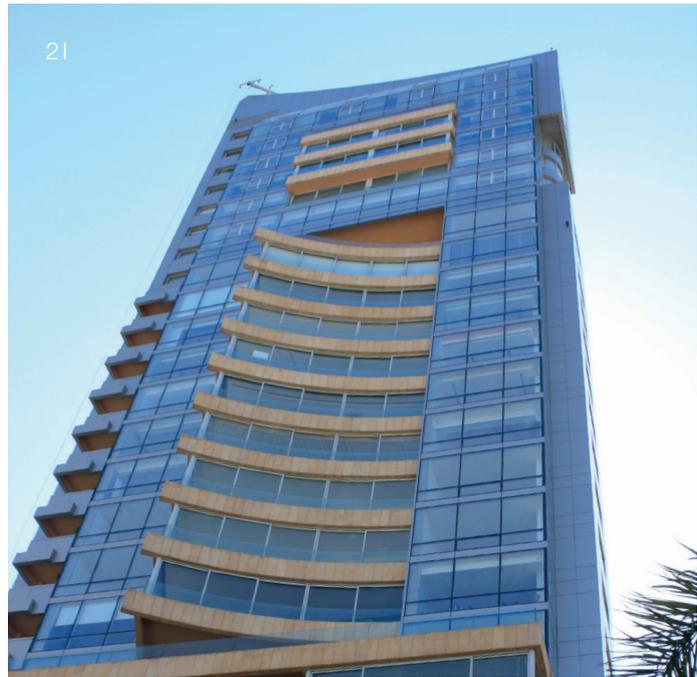
Today, WICONA is weaving its DNA into the city, and asking people to re-think those priorities. Feeding the creativity of Builders imagining positive energy solutions.

**WICONA**  
TECHNOLOGY FOR IDEAS

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## » Urbanism is ready for reinvention

### Why reinvent the city?

What will our cities look like in the future?

Since 2008, says the United Nations, 50% of the world's population lives in towns and cities, some of which have grown to megalopolis proportions in just a few decades; 36 of them are now home to more than 10 million inhabitants.

In 2020, 80% of Europeans will be living in urban areas. By 2050, two-thirds (namely 70%) of those living on our planet will be city-dwellers.

2050 is only just around the corner.

That new density presents us with a huge challenge to overcome - how can we live together successfully under such conditions? - but other factors also have a direct influence on the highly complex system we call "the city". Climate change, depletion of natural resources, starting with fossil fuels and water, decreasing availability of building land, the digital revolution, new ways of living... All represent constraints and opportunities, and force us to re-think our cities. Most importantly, we need to establish and reinvent how we relate to the city. And more than anything, how we relate to one another.

### Towards a new type of urbanism

There is a new order, and a wealth of possible solutions. For a number of years now, many people have been imagining an intelligent, interactive city - the "connected" or smart city - which adapts to our needs through new technologies, particularly information and communication (NICTs). Our world is like a huge experimental laboratory, with new ways of doing things and new urban development models springing up all over the place. They all point a resolutely more "sustainable" city, where economic, social and ecological aspects combine seamlessly around key objectives: a sensible use of resources, putting citizen-users at the heart of planning, a systemic approach to the city.

## » People at the heart of the City of the future

### New cities, new lives

The city of tomorrow is re-envisioned in terms of "function", and offers a cross-wise, decompartmentalized view of urbanism, rather than the top-down approach. This means it is better to talk of "urbanisms" in the plural. The new city, as a real "ecosystem", needs to adapt to where it develops on the globe, as necessitated by the varying climatic conditions. The architecture itself must also fit in with those constraints, just as it needs to respond to the requirements set by the new city's new key player: the citizen-user. The arrival of new generations - led by the "Millennium generation", the famous "Generation Y" - puts collective intelligence and cross-fertilization in the spotlight. The "co" age is upon us: collaboration, cooperation, cocreation, community, underpinned by innovative forms of joint venture and city design, with all stakeholders playing their part.

Against that backdrop, what architecture will tomorrow bring?

### Re-thinking architecture

Although it seems to be generally accepted that the architecture of the future will see a balance between man-made engineering and all of nature's science and ingenuity, the issue has swept aside all the traditional approaches to design and planning. Building Information Modelling (BIM) has already started to revolutionise the way in which buildings, infrastructure and technical networks are planned, designed, created and managed. Other emerging trends will progressively have an influence, each providing new opportunities: the circular economy, urban agriculture, bionics, biomimetics and biomorphism, smart grids etc..

When that happens, designing the buildings of the future will prove to be both a real challenge and a fascinating endeavour.



## » Innovative solutions from WICONA

*It appears the city of the future will be a complex system, itself constructed from ever more complex built objects.*

### Increased complexity

Rather like a fractal composition, the city of the future looks set to be a complex system, itself comprising ever more complex constructed objects, requiring increasingly technical and innovative components. Functions which have previously been juxtaposed or superimposed will gradually merge into the most advanced forms of integration. Behind the functions traditionally assigned to buildings - housing, security and protection, hygiene and comfort etc. - will be a dizzying array of resources and functions: energy production, waste recycling and transformation, social relationships, pooled services, crop cultivation etc.. But at the same time, the legal, economic, social and societal environment will see more numerous and tougher constraints.

Far from restricting room for creativity, these new "diktats" will come to be seen as an invitation to explore and open up new horizons for innovation.

### WICONA, tomorrow today

At WICONA, our technology and people are already hard at work to create the cities and buildings of the future. By reinventing its own DNA, WICONA is not only putting its expertise into durable aluminium system solutions, but also affirming its position as a key player in the evolution of our cities. That promise is demonstrated by WICONA's innovations and its new exclusive or unrivalled systems: 100% recyclable strips by 2017, a 4<sup>th</sup> generation thermal break system with ETC Intelligence, new "PassivHaus" WICLINE 95 and 75 TOP window ranges, new Closed Cavity Façade (CCF) technology, managerial organization around project applications with BIM integration for the WIC 3D software, and an engineering department devoted to special projects.

At WICONA, we're already inventing the city of the future today! Together.

#### 11 Le Cube Orange – Lyon 69

Architect: Jakob & Mac Farlane (75) - Company: Entraxe (69) - Photography: Uniqt

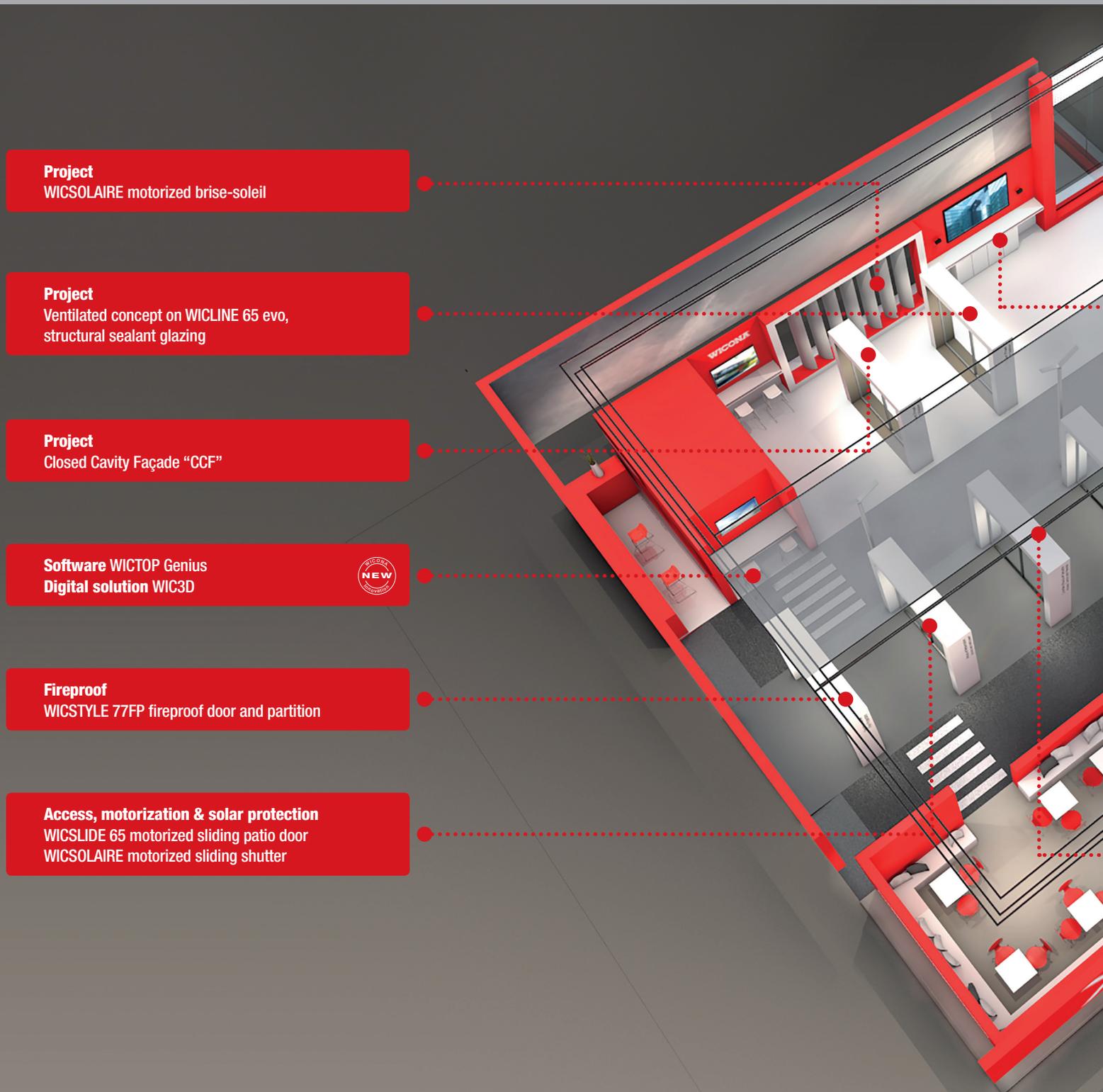
#### 21 Hosn - Lebanon

Architect: Management and Engineering Consultants - Company: Glassline Industries - Photography: WICONA

#### 31 Oxygène-Urbat – Montpellier (34)

Architect: Marie-Elisabeth Nicoleau (34) - Company: Gauthier (43) - Photography: Nicolas Borel

# » The stand



**Project**  
WICSOLAIRE motorized brise-soleil

**Project**  
Ventilated concept on WICLINE 65 evo,  
structural sealant glazing

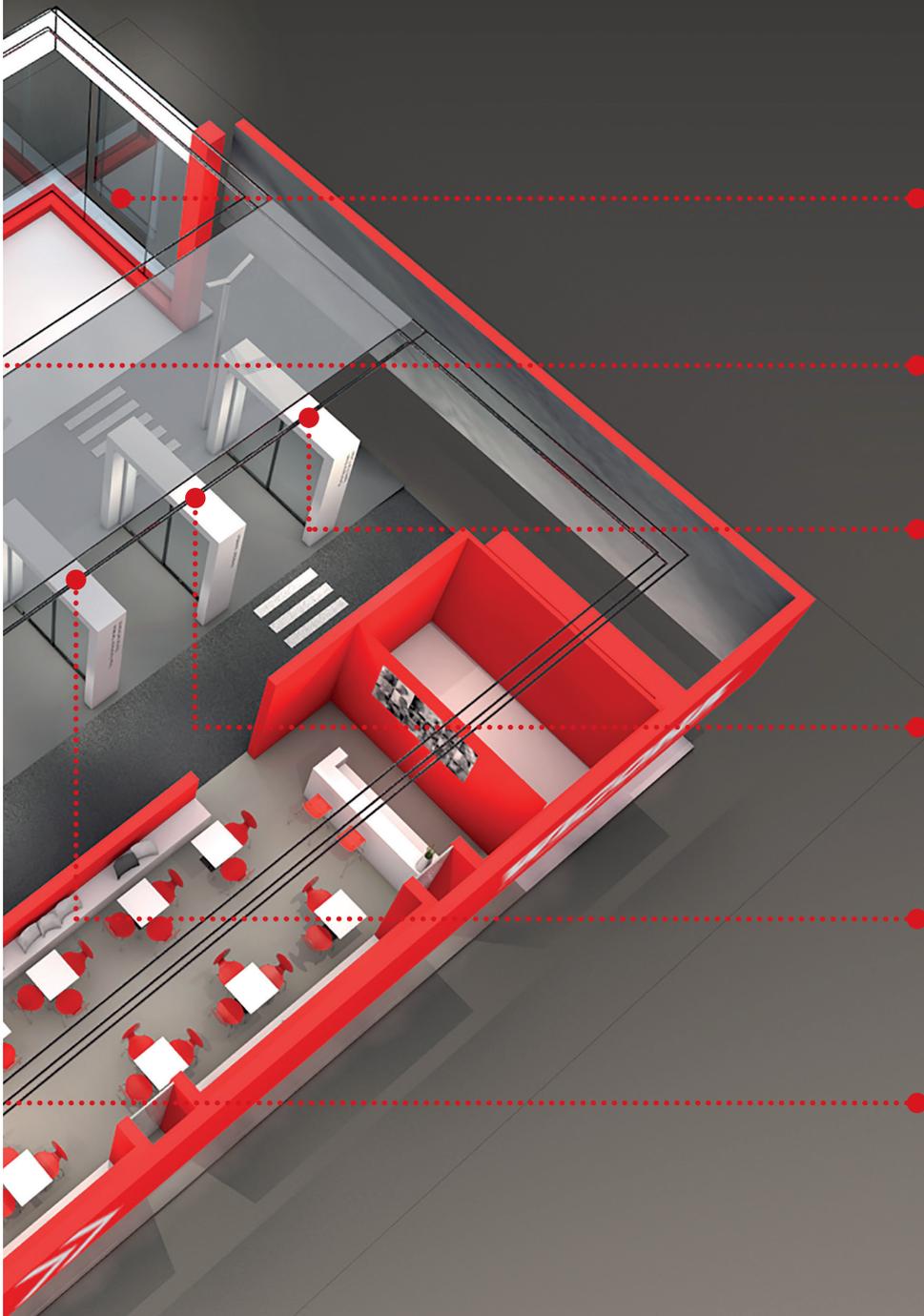
**Project**  
Closed Cavity Façade "CCF"

**Software WICTOP Genius**  
**Digital solution WIC3D**



**Fireproof**  
WICSTYLE 77FP fireproof door and partition

**Access, motorization & solar protection**  
WICSLIDE 65 motorized sliding patio door  
WICSOLAIRE motorized sliding shutter



## Project

WICTEC 50 curtain wall

## Digital solutions

Demonstration of BIM, WIC3D, augmented reality



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## Ventilated frame

WICLINE 115 Active Flow System window



## Ventilation

WICLINE 75 evo motorized ventilation opening sash

WICLINE 75 evo window with opening restrictor

WICLINE 75 evo with micro-ventilation



## Thermal

WICLINE 95 patio door

## Access Control & Security

WICLINE 65 evo forced entry resistant window

WICSTYLE 65 evo forced entry resistant door

» Solutions for the  
city of the future

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# » Digital Solutions



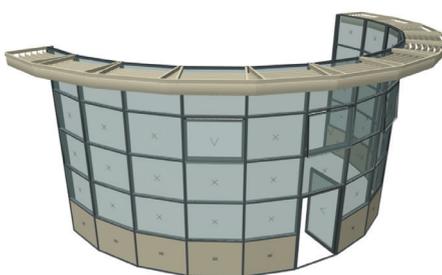
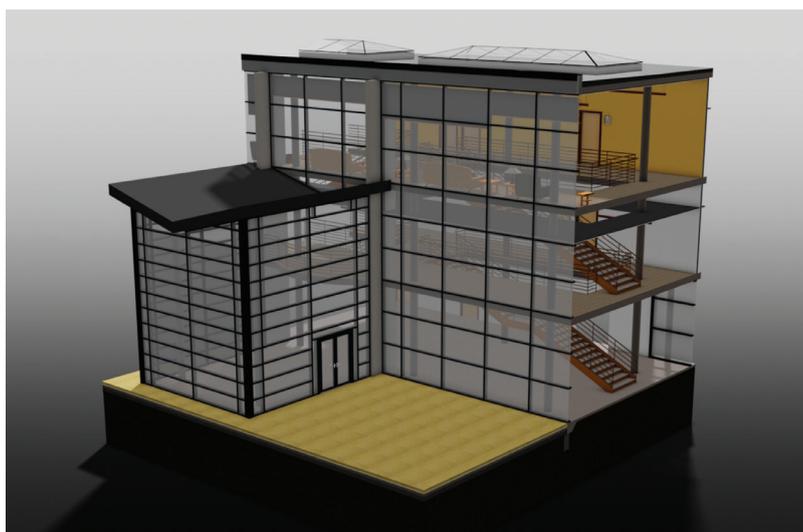
Download WIC3D



## BIM, WIC3D and augmented reality

BIM (or "Building Information Modelling") is defined in the *BIM Handbook* as a technology in which "an accurate virtual model of a building is constructed digitally." These models facilitate the design process with improved analysis and control compared with manual procedures. "When completed, these computer-generated models contain precise geometry and data needed to support the construction, fabrication, and procurement activities."

WICONA has signed up to this approach, which will progressively be made mandatory in France for all public buildings. The brand's desire has always been to be the front runner in terms of design support tools with a global approach using integrated high-performance solutions such as 3D in the WICTOP design and costing software.

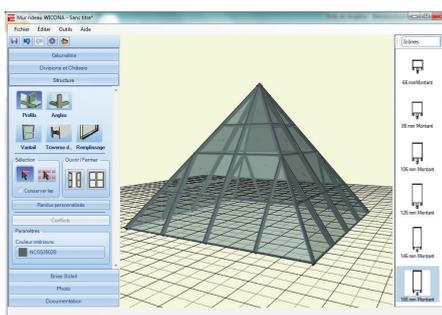


### WICONA's approach is twofold:

- WICONA provides libraries in the "revit" format. The products included such as the WICTEC 50 façade, WICLINE windows and WICSTYLE doors are available on the wicon-int.com website. These objects can be configured.
- For complex constructions, such as curtain-walls, WICONA provides a special piece of software: WIC3D.

Once the mock up has been defined, in Google Sketchup for example, architects can send it to the WIC3D software. They can then redefine the façade or frames with accurate elements of the brand's products that are integrated in the software. Once they have made any changes and recovered the data, architects can reintegrate them into their mock up. These same data can be recovered by WICTOP, the technical costing and design software. It is therefore much easier to check and validate the data that the architect came up with based on WICONA products.

Once any necessary modifications have been made to the project, the fabricator simply has to send these data back to the architect or design office to calculate the building's performance.



### Experience BIM and WIC3D for yourself

On the WICONA stand at Batimat, you can enjoy a unique augmented reality experience. Access a building's digital mock up, and explore the exchange of information between the various workers on site. Also discover just how valuable BIM and the WIC3D software can be in the information exchange chain.

### Features

- Easier access to information for everyone working on the site
- Use of 3D plans which are compatible with the various "trade" software applications
- No re-entering, loss or alteration of data when transferring plans
- Use of all the data beyond the term of the project and the service life of a building

11 Maison du Hip Hop - Lille 59  
 Architect: King Kong (33)  
 Company: PMN (59)  
 Photography: Roland Halbe Office

## » Thermal insulation



### Recycled polyamide strip



*WICONA demonstrates that environmental responsibility is its true priority: it is not just words, but action!*

As market leader in aluminium systems for the construction industry, WICONA is the only European producer to have decided to switch its strip supplies from polyamide to recycled polyamide.

The strips, which are used for thermal breaks in profiles, are produced from 100% recycled material, improving the environmental impact of their production process. The figures are impressive: an 89% drop in fossil fuel consumption, an 84% drop in CO<sub>2</sub> emissions, and water requirements reduced by 32%. When compliance certification is needed for green building schemes such as LEED or DGNB, the improvement in performance, as evidenced by Environmental Product Declarations (EPDs), provides a big competitive advantage.

The recycled polyamide comes from the car industry. This recovered material is transformed into polyamide granules for re-use, in such a way that its characteristics at the end of the process are directly comparable to those of the brand new material. Mixed polymers or recycled mixtures of unknown origin are rejected. Similarly, the process uses neither silicone nor perfluorated compounds (SHVC). This is therefore a clean polyamide recycling process, leading to the production of thermal insulation strips.

The need to satisfy our normal standards has been totally satisfied: the thermally insulated profiles containing recycled polyamide have undergone qualification tests for the IFT Institute in Rosenheim, to

the DIN EN 14024 EPF standard, and have the same mechanical characteristics and physical properties as traditional thermal insulation strips.

True innovation is one of WICONA's distinguishing characteristics, as has been proved in the past with highly successful systems bringing noticeable improvements to the market and giving the sector a real dose of sustainability.

With its key decision to use recycled polyamide for its thermal insulation strips, WICONA is proving once again how committed it is to its role as an environmentally responsible leader.

The use of this innovative concept will gradually be rolled out to the full range of WICONA products, and can already be found in more than 50% of supplies. Customers can benefit now from this real innovation, which brings no particular handling or logistical requirements or additional costs, and profit from it for years to come.

Use of the recycled strip brings savings of 12,400 tonnes of CO<sub>2</sub>, equivalent to the weight of the Eiffel Tower.

### Features

- WICONA, the first and only producer to make use of recycled polyamide
- A reduced carbon footprint: fossil fuel and water consumption, CO<sub>2</sub> emissions
- Material quality and reliability guaranteed 100%
- 10% improvement in EPDs compared with a standard window
- Handling, production time and logistics identical to "standard" frames



**Thermal break strip: ETC Intelligence®**

From the invention of the process in the early 1970s, WICONA was the first façade specialist successfully to implement a thermal break in its aluminium profiles using polyamide insulating strips.

Over the years, WICONA has improved that technology further, arriving at today's 4<sup>th</sup> generation: the "thermal break zone" which is part of the WICONA ETC Intelligence® concept.

**Principle**

The ETC Intelligence® concept is a thermal break zone which offers high levels of thermal insulation, without the need for inserts or foam fillers. A low-emission film effectively reflects heat, while the low-transmittance insulation strips keep thermal conduction to a minimum.

**ETC Intelligence® means:**

- A composite thermal break zone offering high levels of thermal insulation, without the need for inserts or foam fillers.
- A low-transmittance insulation strip to reduce heat loss
- Fins on the insulation strips make it possible to minimize the amount of heat lost through convection in the thermal break zone.
- A low-emission film on the fins to return heat more efficiently



WICLINE 75 TOP

Strip used in a number of products WICLINE 75 Top: eligible for the "PassivHaus" label  
WICLINE 75 TOP: "PassivHaus" level

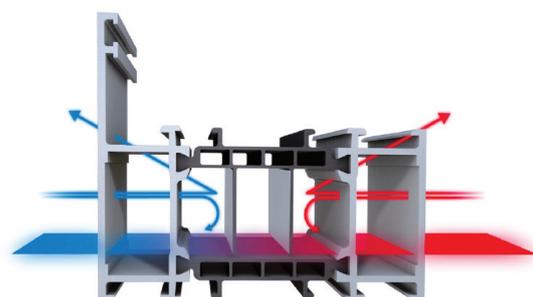
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**Features**

- Fewer components
- Better performance
- No foam fillers - faster production
- Adaptable to a number of series: WICLINE 95 and WICLINE 75 TOP

**ETC Intelligence®:**

- » **Low Emission**  
- Aluminium foils to reflect radiated heat
- » **Low transmittance**  
- Strip material reduces heat transmittance
- » **Low Convection**  
- Fins to prevent convection within the chamber



# » Project Solutions

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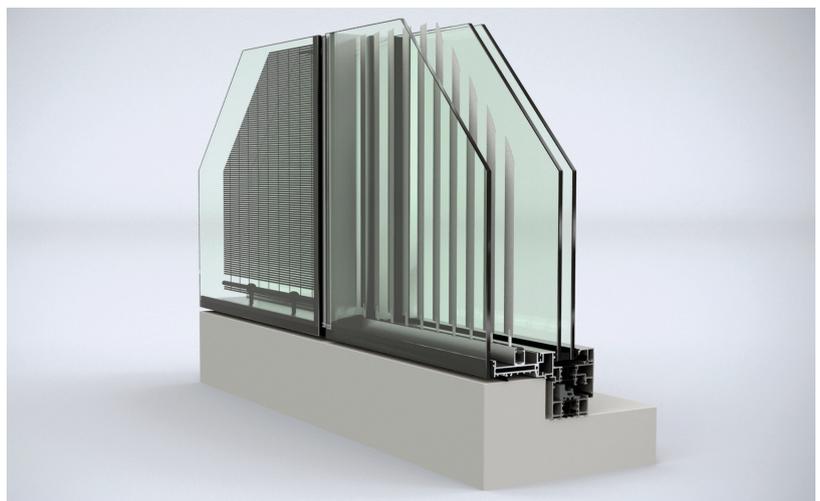
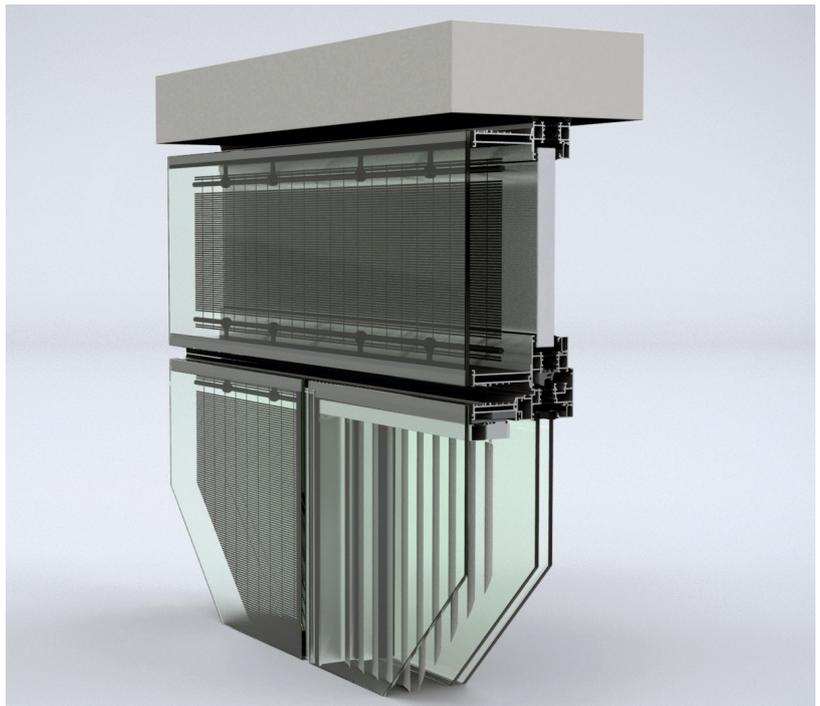
## » Ventilated concept

### Ventilated frame based on WICLINE 65 evo, Structural Sealant glazing

Based on the WICLINE 65 series, this ventilated composite assembly enables fully glazed façades to be produced with a completely flush appearance (no security glazing clips). This means that high performance values on the casement frame can be coupled with the advantages of a ventilated system and the aesthetic looks of a façade.

An aluminium ventilated frame with structural sealant glazing is added on the exterior of the frame structure as well as on the opening sashes.

- Ventilated frame based on the WICLINE 65 evo window
- An aluminium ventilated frame with structural sealant glazing is added on the exterior of the frame structure as well as on the opening sashes
- The 6 mm enamelled plate glass is bonded to the aluminium frame without adhesive strips
- Fragmentation screws to secure the glazing, no safety lugs
- Opaque parts treated in a shadow box with an interior panel flush with the bead, various type of cladding integrated into the airspace. Infinite architectural variations
- Elements fixed in a shadow box
- Vertical-blade blind
- Impurities in the air entering in the lower section are removed by integrated filters (44% opening) and the integration of screens in this airspace prevents them from soiling. Increased cleanliness, particularly suitable for sensitive areas such as hospitals
- Reduced maintenance and cleaning costs
- Presented in a version with motorized Warema Californian blinds and external opening glass for easy access to the airspace
- Improved thermal performance thanks to the breathable airspace
- Large-size opening sashes thanks to the base performance of the series and an improved mechanical strength thanks to the added frame
- Pressure balancing through ventilation holes in the lower sections
- Incomparable aesthetic appearance: no aluminium visible from the outside, peripheral 25 mm hollow gasket.
- Adaptable to infinite architectural and aesthetic variations to suit the choice of blinds and latticework in the fixed part
- More than 40,000 m<sup>2</sup> of façades already installed



### Technical characteristics

- Maximum dimensions per leaf: L 1600 mm x H 2500 mm
- Maximum weight per leaf: 130 kg
- Thermal:  $U_w = 1.2 \text{ W}/(\text{m}^2.\text{K})$ , with glazing  $U_g = 1.1 \text{ W}/(\text{m}^2.\text{K})$  and  $U_p = 0.85 \text{ W}/(\text{m}^2.\text{K})$
- Acoustic: RA, tr = 35, 41 and 43 dB
- Air Water Wind tests:
  - Air permeability: class 4 (A\*4)
  - Watertightness: class E1050 (E\*E1050)
  - Wind resistance: class C5 (V\*C5)

### Features

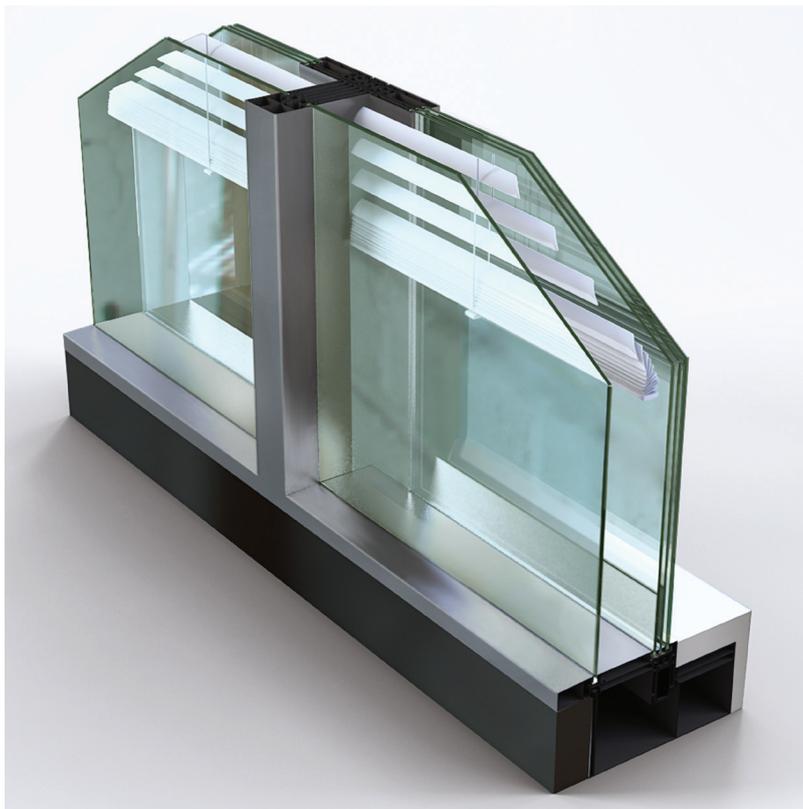
- Large dimensions
- Thermal performance
- Infinite architectural variations
- Particularly suitable for sensitive areas such as hospitals

11 CMA CGM Hq - Lebanon

Architect: Nabil Gholam Architects - Company: Glassline Industries - Photography: Richard Saad



## » Closed Cavity Façade



With the launch of Closed Cavity Façade technology, WICONA, the market leader in aluminium frame solutions, shows how to combine building automation with façade design.

In cities, energy upgrading of buildings provides a great opportunity to deal with the challenges they face: increasing urban population density, a scarcity of available land, increasing land prices, finding ways to improve buildings' energy efficiency etc.. The residential and tertiary sectors are responsible for 43% of final energy consumption and over 20% of greenhouse gas emissions. Buildings in the tertiary sector, meanwhile, account for a third of this amount, hence the urgent need to initiate actions to upgrade energy efficiency. The building envelope has a vital role to play in the pursuit of sustainable, effective and size-optimized urban planning.

### The principle

The CCF is a sealed double skin closed-cavity "element" façade providing automatic control of "dry air" circulation and pressure in all building modules. WICONA launched a research project to study the automation of these modules and the impact of closed cavity conditions on the solutions and materials used for façades. That research and development work was undertaken at the WICONA ZEB laboratory test centre in Bellenberg, Germany, and is ongoing.



### Features

- Reduced dimensions
- Increased glazing transparency
- Reduced operating costs: care, maintenance
- No condensation risk due to "dry air" injection
- Increased longevity of the solar protection system

### Engineering working for buildings

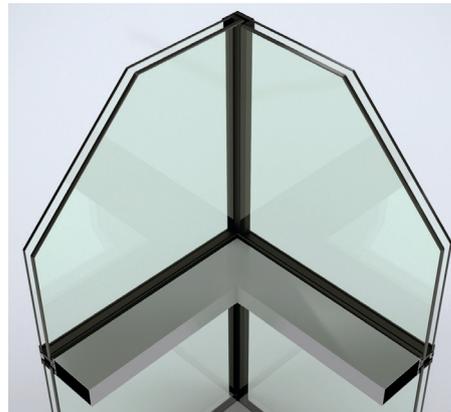
Regulating pressure conditions in units poses quite a challenge. WICONA is venturing into uncharted territory and is working in collaboration with specialists in compressed air.

Materials which come into contact with the dry air which is blown into the closed cavity must undergo a set of precise tests. Gaskets, sealing products, powder-coated surfaces and solar protection systems are all subject to tests in order to ascertain their reaction to dry air, durability and longevity. Furthermore, increased requirements concerning cavity sealing necessitate adjustments in the production and manufacturing of the units.

### Technical characteristics

- Exterior: single glazing
- Interior: double or triple glazing
- Fabric or blade blinds integrated between the two glazed units
- Prefabrication of modules in the workshop
- Reduced façade depth: up to 400 mm
- Thermal and acoustic performance:
  - $U_w = 0.7 \text{ W/(m}^2\cdot\text{K)}$  with triple glazing
  - $U_g = 0.5 \text{ W/(m}^2\cdot\text{K)}$
  - $RA, tr = 48 \text{ dB}$





## » WICTEC 50 curtain wall

WICTEC 50 solutions are used to create very large vertical façades. Thanks to the WICONA patent, WICTEC range offers the possibility of creating façades with variable re-entrant or salient angles. The element drainage system makes the curtain wall and glass roofs leaktight. A wide choice of cap profiles and transoms can be used to customize façades.



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- Grid façade, flat cap with screw cover
- Integrated double glazing LEDs
- Integration of the WICLINE 90 SG parallel opening sash in the motorized version
- Reliable weight transfer for infills up to 560 kg, with an adaptable transom coupling principle
- Element drainage carried out by overlapping the transoms with the mullions for a tested, guaranteed seal
- Wide choice of profiles for economical adjustment to the required inertia up to 11,000 cm<sup>4</sup>
- Exterior glazing with caps of various shapes, made of aluminium or stainless steel, with visible or concealed screws
- Large sizes, rooflights, domes, pyramids, facets
- Presented without corner posts and with off-centre transom

### Technical performance

- Maximum infill weight per transom: up to 560 kg with assembly block
- Thermal grid with integrated opening sash:
  - Ucw 100 % glazed = 1.2 W/(m<sup>2</sup>.K) with glazing Ug = 0.6 W/(m<sup>2</sup>.K)
  - Ucw 50 % glazed = up to 1.1 W/(m<sup>2</sup>.K) with glazing Ug = 0.6 W/(m<sup>2</sup>.K and Up = 0.35 W/(m<sup>2</sup>.K)
- Acoustic: RA, tr up to 43 dB with 40 mm glazing to fixed and opening sections
- Air Water Wind tests:
  - Air permeability: class AE (A\*AE)
  - Watertightness: class RE1200 (E\* RE1200)
  - Wind resistance: 2,000/-3,200 Pa, safety 3,000/-4,800 Pa

### Features

- Large dimensions
- High performance
- Great architectural freedom

### 11 Business Bay - United Arab Emirates

Architect: Arab Engineering Experts Designers

Company: Glassline Industries

Photography: WICONA



## motorized brise-soleil

Suited to all projects, WICSOLAIRE brise-soleil blades meet the architectural and technical requirements of buildings today: solar protection and light management to reduce air conditioning requirements and increase comfort.

- Independent structure fastening system, 300 mm x 40 mm motorized rectangular blades
- Systems for fixing to an independent structure, in the form of aluminium clips with four angles of inclination (0°, 15°, 30°, 45°).
- Concealed motor
- Blades positioned vertically or horizontally by motor or manually
- Vertical, sloping or horizontal applications



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### Features

- Energy savings
- Modular design
- Blade position management
- Perfect integration into high environmental quality and low emissive buildings
- Integrated motor
- Suitable for all architectural solutions



# » Product Solutions



## » Ventilated frame

### WICLINE 115 Active Flow System window

WICONA presents a new generation of ventilated windows with an integrated service leaf, based on a 115 mm module. Thermal performance can be adjusted. Access to the motorized blind, through the service opening sash, makes for easy air gap maintenance. Adaptation of the opening sash into a fixed frame provides the same level of performance across the whole composite element and ensures symmetry of the visible structure.

The opening sash, with its flush inner surface, facilitates cleaning of the frame. The airflow principle and exceptional sealing ensure system reliability and high performance.

- Adjustable thermal performance
- Monitoring and control of thermal flow
- Double and triple internal glazing options
- Concealed glazing beads and hardware
- Service opening sash to access the blind
- Opening or fixed system to ensure symmetry of visible structure
- Integrated motorized blind
- Identical hardware to WICLINE 65 and 75 evo

### Technical performance

- Maximum dimensions per leaf:  
L 1700 mm x H 2500 mm
- Hardware:
  - Concealed, maximum weight per leaf: 160 kg
  - Visible, maximum weight per leaf: 200 kg
- Thermal:
  - $U_w = 1.1 \text{ W}/(\text{m}^2 \cdot \text{K})$  with triple glazing
  - $U_g = 1.1 \text{ W}/(\text{m}^2 \cdot \text{K})$
  - $U_w = 1.0 \text{ W}/(\text{m}^2 \cdot \text{K})$  with triple glazing
  - $U_g = 0.7 \text{ W}/(\text{m}^2 \cdot \text{K})$



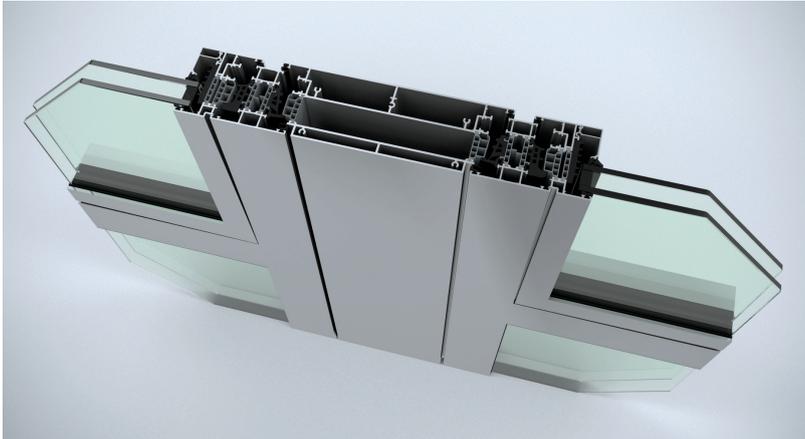
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### Features

- Very high thermal and acoustic performance
- Solar control
- Easy cleaning and maintenance
- Particularly suitable for hospitals

11 Holiday Inn - Dijon (21)  
Architect: Seturec (21)  
Company: Acrem Metal (21)  
Photography: Sophie Boguet

## » Ventilation



As a composite assembly based on WICLINE 75 evo, WICONA offers ventilation solutions to suit different markets, meeting expectations regarding building ventilation. Micro-ventilation is now available with the WICLINE 65 evo range. The window with opening restrictor will also be available in the WICLINE 65 evo range in 2016.

### WICLINE 75 evo ventilation opening sash

- System thickness 75 mm
- One-piece opening sash profile, with several chambers and high thermal insulation. Sight line widths of 180 or 250 mm
- With a smart base system enabling great flexibility, it is possible to have additional widths subject to discussion
- Profiles cut with single saw cut at 90°
- A central gasket with peripheral seal and vulcanised corners
- Motor drive for frame unlocking and opening mechanism integrated into the frame
- Opening mechanism integrated into the frame (for use with surface-mounted fittings)
- Ventilation opening sash ships with an opening angle of 90°
- Subsequent adjustment of settings (opening angle, speed of movement, opening and closing force)
- Invisible emergency unlocking device
- No drive chain
- Aeration controlled via remote control or via the building's centralized control system
- Optional opening restrictor

### Technical performance

- Maximum dimensions per frame:  
L 180 mm x H 3000 mm  
or L 250 mm x H 3000 mm
- Maximum weight per frame: 80 kg
- Thermal:  $U_w = 1.2 \text{ W}/(\text{m}^2 \cdot \text{K})$
- Air Water Wind tests:
  - Air permeability: Class 4
  - Watertightness: Class 9A
  - Wind resistance: Class C5/B5

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### Features

- Encourages natural ventilation
- Large dimensions
- Totally invisible motor drive system, without chain
- Refined design



## WICLINE 75 evo with opening restrictor and micro-ventilation

With a profile depth of 75 mm, WICLINE evo provides the best characteristics in terms of thermal insulation and structural stability. With its enhanced technical performance, this aluminium window is perfectly suited to the architectural requirements of the future. The concealed hardware gives the assembly an understated elegance.

- Profile with high thermal performance and double/triple-chamber strip
- Assembly with special cleats (adhesive injection), WICONA patent
- Glass thickness capacity: up to 59 mm
- Dual-component central gasket for superior sealing, coextruded with EPDM foam, with 3 fitting methods:
  - circumferentially, no breaks in the corners
  - with moulded corner parts not requiring bonding
  - with vulcanized frames
- Option: frame for integration into a curtain wall
- WICLINE 75 evo is Minergie-P certified in Switzerland

### Window with micro-ventilation

- Tilt/turn frame with micro-ventilation
- Opening limited to 5 mm in intermediate position
- Opening as a conventional turn/tilt is still possible

### Window with opening restrictor

- Opening restrictor compliant with EN13126-5 regulations
- Adjustable opening width
- Removable for cleaning

### Technical performance

- Maximum dimensions per leaf:
  - L 1700 mm x H 2500 mm
- Hardware:
  - Concealed, maximum weight per leaf: 160 kg
  - Visible, maximum weight per leaf: 200 kg
  - Visible, open-in, maximum weight per leaf: 300 kg (upon request)
  - Damper in integrated end position
  - Invisible embedded gearbox
  - Optional opening restrictor
- Thermal: Uw up to 0.93 W/(m².K)
- Acoustic: Rw (C ; Ctr) = 47 (-1; -4) dB

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- Air Water Wind tests:
  - Air permeability: class 4 (A\*4)
  - Watertightness: class E900 (E\*E900)
  - Wind resistance: class C5/B5 (V\*C5/B5)

### Features

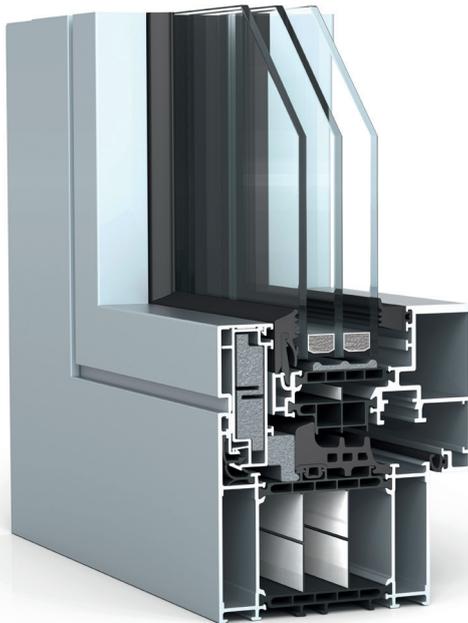
- Large dimensions
- High thermal and acoustic performance
- Great architectural freedom thanks to concealed hardware

#### 1 | Amber Expo Gdansk, Poland

Architect: P.P.W Fort Sp. z o.o. - Companies: Profal Sp. z o.o. and Bausan Aluminium Sp. z o.o.  
Photography: Bartosz Makowski

#### 2 | Europaallee, Switzerland

Architect: KCAP Architects and Planners - Companies: Aepli Metallbau and Geillinger Fenster und Fassaden AG - Photography: WICONA



### Features

- “PassivHaus” labelled
- Conventional fitting
- Easy manufacture with clippable profile
- Adjustable performance
- Understated, sleek design

## » Thermal

### WICLINE 95 Window & Patio door

With the range of WICLINE 95 windows, WICONA is breaking new ground in terms of energy efficiency and high energy performance frames to meet demanding Passive House requirements.

The WICLINE 95 frame, combined with ETC Intelligence®, is Passive House-certified with a thermal performance of 0.8 W/(m².K) and Ug 0.7 W/(m².K), achieved without the addition of insulating foam. The exterior heat insulation technique, with fitting in rebate, is often used to achieve “PassivHaus” certification; this technique, however, is not needed with this window. The opening sash protection, integrated into the fixed frame, enables the system to achieve very high performance values.

### The “PassivHaus”-certified window

- “PassivHaus”-certified frame with conventional fitting (fitting in rebate is not necessary)
- Presented in a configuration where the visible structures are identical in fixed and opening sections
- Re-use of the DPS system from WICLINE 65 & 75 evo windows
- Re-use of several elements from existing series, such as cleats and the central gasket
- Hidden drainage
- Concealed opening sash technique
- Maximum infill of 55 mm
- Insulation system integrated into the frame
- Conventional fitting
- Easy manufacture with clippable profile
- Adjustable performance
- Understated, sleek design

### Technical performance

- Maximum dimensions per frame:  
L 1230 mm x H 1480 mm
- Profile depth of 95 mm
- Maximum weight per frame: 160 kg
- Thermal:
  - Uw value = 0.80 W/(m².K) with Ug = 0.7 W/(m².K)
  - Uw value less than 0.80 W/(m².K)
- Acoustic: RA, tr up to 47 dB
- Air Water Wind tests:
  - Air permeability: 9A
  - Watertightness: C5/B4
  - Wind resistance: class C4 (V\*C4)

**On sale: mid 2016.**

## » Fireproof

### WICSTYLE 77 FP fireproof door and partition

Fire protection is one of the most sensitive sectors in construction. Designed for all public buildings, hospitals, hotels, health centres, schools, colleges, entertainment and leisure venues, whether for new builds or renovations, fireproof doors provide suitable solutions for flame-resistant and fire-resistant classification. With the WICSTYLE 77FP range of fireproof doors and partitions, WICONA shows that fire safety can go hand-in-hand with style.

- Door made to E30 firebreak classification and for EI60 partition
- Glazed inner partition with no mullion, edge-to-edge bonding of glazing height-wise
- Profile with thermal break
- Flame and flammable gas proof
- 3 types of threshold gasket: automatic, EPDM tail gasket, and a possible solution without a sealing system
- Can be combined with WICTEC 50FP
- Pyrostop 30-10 glazing, simple or fitted in insulators, or solid panels
- No aluminium mullion
- Production of facets and right angles
- Test conducted (05/10/2015) and report being drafted
- Integrated door-opener
- Safety radar check upon opening

### Technical performance

- Maximum dimensions per leaf: possible up to L 1400 mm x H 2510 mm (single leaf) or L 2557 mm x H 2510 mm (double leaf)
- Maximum weight per leaf: up to 260 kg



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### Features

- Large dimensions
- Compatibility with the other products in the fireproof range
- Wide selection of hardware for doors to suit all architectural projects

1 | Berufsschule, Germany  
Architect: Spreen Architekten - Companies: Dodel and Gergeni  
Photography: WICONA

## » Access Control and Security



WICONA offers a full range of WICLINE evo windows & patio doors, and WICSTYLE evo doors to provide building security. These advanced solutions available in a 65 mm section are also available in a 75 evo version. They can be adapted to all markets, both new-build and renovation.

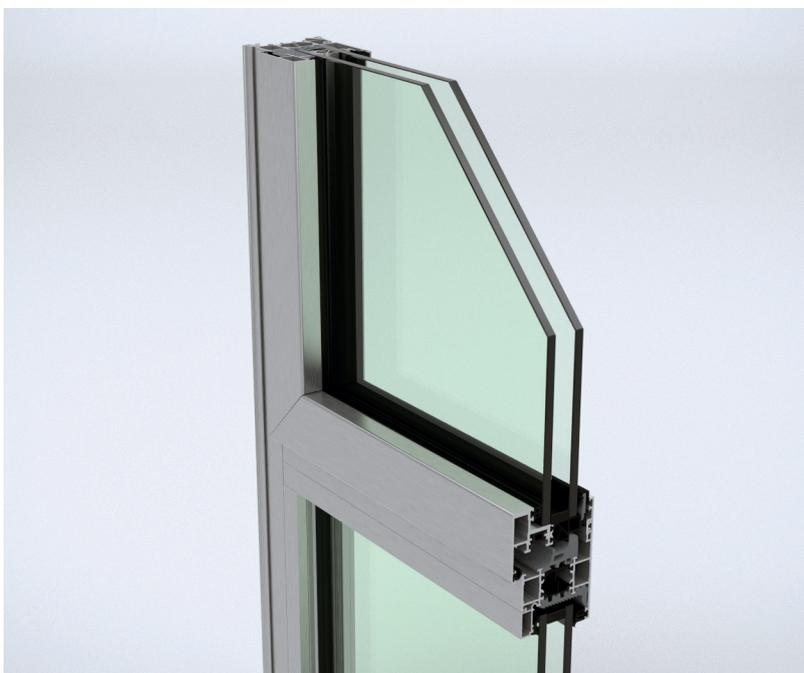
### WICLINE 65 evo forced entry resistant window



- Presented in the concealed opening sash version, forced entry resistance options are also available on the visible opening sash
- Forced entry resistance in accordance with the EN 1627 standard: RC1 to RC3

### Technical performance

- Maximum dimensions per frame:  
L 1700 mm x H 2500 mm
- Maximum weight per frame: 130 kg
- Thermal (1-leaf patio door):  
L 1250 mm x H 2180 mm):
  - $U_w = 1.5 \text{ W}/(\text{m}^2\cdot\text{K})$  with  $U_g = 1.0 \text{ W}/(\text{m}^2\cdot\text{K})$
  - $0.15 < S_w < 0.50$  depending on solar factor of glazing  $S_g$
  - $T_I = 85 \%$
- Acoustic: RA, tr = 35, 38 and 40 dB
- Air Water Wind tests:
  - Air permeability: class 4 (A\*4)
  - Watertightness: class E900 (E\*E900)
  - Wind resistance: class C4 (V\*C4)



### Features

- High level of security
- High thermal and acoustic performance
- Upgradable from RC1 to RC3
- Based on the standard series

## WICSTYLE 65 evo forced entry resistant door



Presented with concealed hinges, digital access control system and electrical lock

- Forced entry resistance in accordance with the EN 1627 standard: RC1 to RC3
- Access control system using fingerprint recognition
- Concealed hinges

### Technical performance

- Maximum dimensions per leaf:  
L 1400 mm x H 2520 mm
- Maximum weight per leaf: 200 kg
- Thermal: Ud up to 1.3 W/(m<sup>2</sup>.K)
- Acoustic: RA, tr = 35, 38 and 40 dB
- Air Water Wind tests:
  - Air permeability: up to class 4 (A\*4)
  - Watertightness: up to 7A (E\*7A)
  - Wind resistance: class C2 (V\*C2)



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### Features

- High level of security
- High thermal and acoustic performance
- Upgradable from RC1 to RC3
- Based on the standard series
- Concealed hinge, 180° opening



## » Access, motorization & solar protection



### **WICSLIDE 65** **Motorized sliding patio door**

The WICSLIDE 65 sliding system combines large sizes and thermal performance. A wide range of design options is available: curved or straight design, concealed or visible drainage. The many leaf combinations allow for a great deal of design freedom. The threshold is suitable for people with reduced mobility and fulfils accessibility requirements.

#### **Sliding system with thermal break**

- Motorized sliding system with reduced height threshold for people with reduced mobility
- Motor drive with remotely controlled opening
- Fixed frame (65 mm deep) with 30 mm double polyamide strip (PA 6.6)
- Opening sashes available:
  - 24 mm with 24 mm glass thickness capacity (grey gasket as option)
  - 32 mm with 24, 28 and 32 mm glass thickness capacity (grey gasket as option for 32 mm)
- 2 styles of opening sash: square or curved
- Track: aluminium, polyamide or stainless steel
- Special WICONA handle design

#### **Technical performance**

- Maximum dimensions per leaf:  
L 1500 mm x H 2500 mm
- Maximum weight per leaf, single rollers: 80 kg
- Maximum weight per leaf, double rollers: 220 kg
- Thermal (2-leaf frame L 2300 x H 2180 mm):  
U<sub>w</sub> = 1.5 W/(m<sup>2</sup>.K) with glazing U<sub>g</sub> = 1.0 W/(m<sup>2</sup>.K)
- Acoustic (2-leaf frame):  
L 1848 x H 2180 mm, outer fixed frame with 44,2S/14/8 double glazing): RA, tr = 35 dB
- Air Water Wind tests:
  - Air permeability: class 4 (A\*4)
  - Watertightness: class 4B (E\*4B)
  - Wind resistance: class A3 (V\*A3)

### **Features**

- Easy drive unit installation
- Discrete, blended control box integration with identical colour to frame
- Reduced height threshold to enable access to persons with reduced mobility

## WICSOLAIRE motorized sliding shutter

The WICSOLAIRE solar protection range has been extended with a new offer of aluminium sliding shutters or screens. Suited to the needs of modern buildings, either new or renovation projects, WICSOLAIRE sliding shutters overcome the architectural and technical challenges posed by buildings: solar irradiance management, temperature control, natural ventilation of buildings.

The motor is hidden in a sleek strip, and provides movement as well as locking/unlocking. Silent, safe lateral movement: detects obstacles and stops automatically.

- Various infills available: solid or louvered
- Multiple combinations for windows and patio doors
- Surface-mounted, or under lintel
- Large dimensions
- Forced entry delay
- Fixed or directional blades
- Integrated motor drive on track
- Hook lock for sliding shutters
- Aluminium latch and locking plate: can be fitted on the left or the right, 2 positions (long and short)
- 1 or 3 point locking systems, with or without operating handles, a two-point espagnolette or lateral or vertical bolts
- Screening of buildings
- Usable as screens
- Available in all WICCOLOR finishes

### Technical performance

- Maximum dimensions: L 2400 mm x H 1400 mm
- Maximum weight: 80 kg total
- Endurance > 25,000 cycles
- Acoustic: RA, tr up to 60 dB
- Control: radio or wired remote control
- Safety: finger protection system, ability to switch to manual mode in the event of a power cut



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### Features

- Solar protection
- Safety
- Natural ventilation
- Particularly suited to new architectural demands

# WICONA®

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